

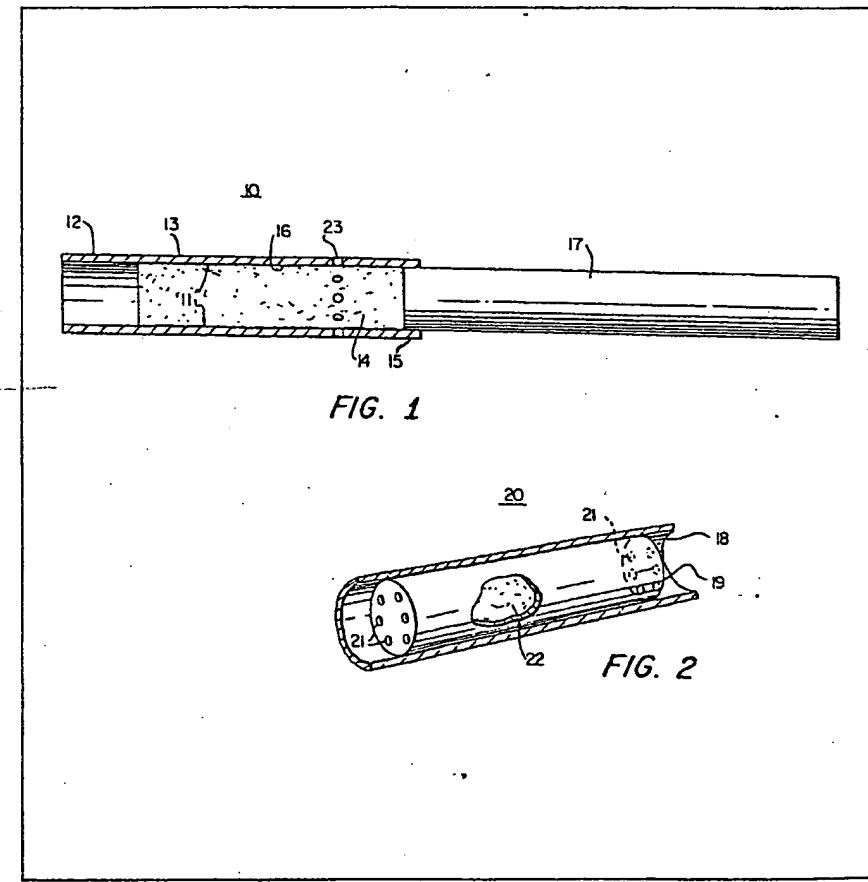
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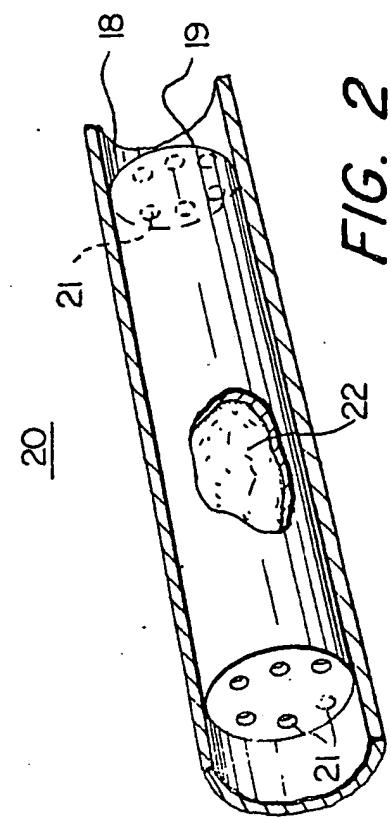
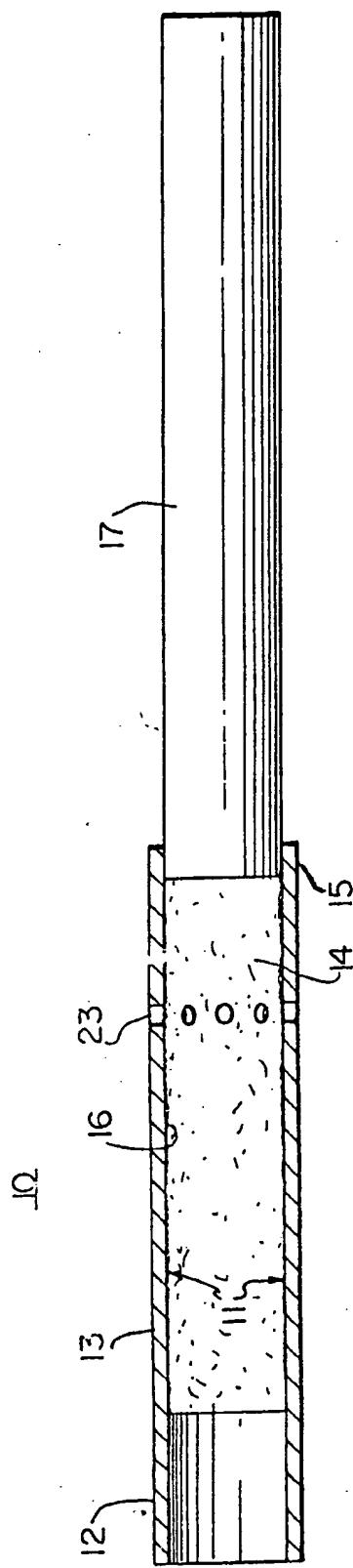
(54) Cigarette holder

(57) A cigarette holder comprises a mouthpiece and a cigarette recess separated by a catalyst chamber having perforated sidewalls.

The holder of paper or the like may contain catalytic particles or to be coated in its interior with a formulation of fine catalytic particles, such as metal oxides for providing conversion of toxic gases such as carbon monoxide into non-toxic carbon dioxide entrained in tobacco smoke. Also, in lieu of coating the interior smoke passage of the holder with catalytic particles, a suitable perforate capsule containing suitable metal oxide particles may be placed therein.



GB 2 026 842 A



SPECIFICATION

Cigarette holder

5 Generally this invention relates to a disposable cigarette holder with a body having a chamber so formed and shaped as to permit it to be internally coated with a formulation of fine catalytic particles, or to contain a suitably conformable capsule filled
 10 with suitable catalytic metallic oxide particles, to provide catalysts for conversion of carbon monoxide gas entrained in cigarette smoke into harmless non-toxic gas, such as carbon dioxide before it enters the mouth of a smoker.

15 It has been proven by positive tests that tobacco smoke emits toxic substances and gases, which as they enter smokers' mouths and into the respiratory areas of the body provided a serious health hazard. Also, carbon monoxide is probably the most hazardous and dangerous of the tobacco smoke emitting gases. For example, it is known that carbon monoxide combines more readily than oxygen with the hemoglobin in the red cells of the blood stream thus making CO gas so hazardous and dangerous. In fact,
 20 25 when sufficient concentration of carbon monoxide piles up in the blood, little or not oxygen vital to good health is carried to the body tissues. A complete discussion of the effects of CO and other gases can be found in the October and December 30 1976 issues of *Readers Digest*.

Heretofore it has been attempted to remove harmful substances in smoke to less harmful form by chemically treated tobacco. This technique is described, for example, in U.S. Patents 3,473,535
 35 and 3,656,489 to Stahly. The Stahly technique suffers from the disadvantage that the formulations of the treating agent must be compatible with the tobacco with which it is mixed in order not to have adverse effects on the burning or taste thereof. In addition,
 40 the Stahly technique must be performed at the point of manufacture which is of no benefit to smokers if manufacturers choose not to treat the tobacco.

Accordingly, in view of the foregoing known facts regarding toxic gases in tobacco smoke, the main
 45 object of this invention is to convert the probably most harmful carbon monoxide gas into relatively harmless carbon dioxide gas before it enters a smokers mouth and thence into a smokers body tissues.

50 A more specific object is to make a cigarette holder which is in effect a disposable catalytic converter for such smoke entrained toxic gas into non-toxic gas.

Still another specific object is to provide a cigarette holder with a conduit-like formation or chamber
 55 with an interior catalyst coating, thereby resulting in a catalytic conversion of a known toxic gas into a known non-toxic gas before it enters a smokers body.

Yet another object is to provide a throw away
 60 paper cigarette holder with a holding chamber for a perforate capsule containing suitable known catalytic particles such as oxides of manganese, cobalt, copper and the like to thereby convert toxic carbon monoxide gas into non-toxic carbon dioxide gas
 65 before the smoke flowing through the cigarette

holder enters a smoker's mouth.

Another object is to provide a cigarette holder with integral catalysts to provide catalytic conversion of the toxic CO gas to non-toxic CO₂ gas in tobacco
 70 smoke generated from any and all brands of cigarettes, cigars or any tobacco smoke producing product regardless of whether or not the tobacco content per se thereby is treated to reduce harmful gases.

Figure 1 is a longitudinal sectional view of one

75 suitable form of disposable cigarette holder showing a coated interior chamber through which cigarette generated tobacco smoke passes to exhaust from the holder mouth piece; and

Figure 2 is a similar view to *Figure 1* but instead of

80 a catalytic coating in the chamber, includes a perforate capsule containing suitable metal oxide particles or any suitable catalyst for the gas conversion of this invention.

In reference to *Figure 1* of the drawing, there is

85 shown a cigarette holder 10. This holder may be suitably formed, for example, by molding or folding the same from a suitable throw-away or disposable material, such as cardboard, paper or the like. It is so shaped and formed as to have a mouth piece 12 of

90 plastic or paper, a tubular body 13 in the provision of a catalyst chamber 14 and a terminal end 15 formed to frictionally engage or grip the end of a cigarette 17 to be ignited and smoked. The terminal end dimensions are chosen so that it will accommodate any

95 standard size cigarette.

As generally illustrated, the interior surface 16 of chamber 14 is coated by spraying or brushing with a suitable catalytic formulation 11 comprising any known metal oxide mixture of oxides for catalytic reaction with toxic CO gas entrained in the tobacco to convert the same to non-toxic CO₂ gas, as the tobacco smoke passes into the catalyst chamber 14 and, thence, from the mouth piece 12 into a smoker's mouth.

100 105 The chamber 14 may be a separable part from the holder mouth piece 12 to facilitate coating the interior of the chamber 14 with suitable catalytic oxide formulations during manufacture. However, in a preferred embodiment the entire holder is formed from a single piece of paper rolled into a tubular shape.

The coated surface in the catalyst chamber 14 may be formulated from fine particles of mixed oxides of for example, manganese, cobalt and copper or each of these oxides taken alone.

110 115 The mouth piece 12 may be filled with a conventional filter material normally found in the ends of cigarettes to filter out other harmful substances in tobacco smoke.

120 Perforations 23 are provided in the side walls of chamber 14 to permit the passage of air therethrough. This has a two-fold effect. Firstly, the air provides oxygen which reacts with the carbon monoxide in the presence of the catalyst to convert the CO to CO₂. Secondly, the air has a cooling effect on the smoke which improves the taste.

125 Referring to *Figure 2* of the drawing, there is shown a perforate capsule 18 in a chamber 19 of a cigarette holder 20. This chamber is similar to chamber 14 of *Figure 1*, and may or may not b

coated interiorly, as the capsule 18 is loaded with a catalytic material and is intended to be sufficient to provide a catalyst reaction for conversion of CO gas in the flowing tobacco smoke into CO₂ gas.

5 The capsule 18 may be made of paper or plastic formed with air smoke passage perforations 21 and is filled with suitable catalytic oxide particles 22. Such capsules may be packaged separately for more permanently made cigarette holders, if throw-away 10 units are not desired. Also, the capsule 19 inserts are made so as to fit snugly in the chamber 18 to prevent any harassing movement in the catalyst chamber 19 during use of the holder by the smoker.

Thus, there is provided a cigarette holder having a 15 mouth piece, a catalyst and gas conversion chamber and a cigarette or a cigar holding terminal end, to provide a smoke purifying arrangement to convert toxic gas such as CO gas to non-toxic gas such as CO₂ gas, before the smoke flows into the holder 20 mouth piece.

CLAIMS

1. A holder for a cigarette or the like, said holder 25 comprising:
 - a mouth piece;
 - a catalyst chamber having perforated sidewalls therein for the passage of air;
 - a catalyst material disposed in said catalyst chamber for the conversion of toxic gas to non-toxic gas; and
 - a terminal end means for engaging and holding an end of a cigarette or the like in said holder.
2. A holder according to claim 1, wherein said 35 catalyst chamber has an interior wall coated with said catalyst material.
3. A holder according to claim 1, wherein said chamber houses a perforated capsule containing said catalyst material.
- 40 4. A holder according to any one of the preceding claims fabricated from paper rolled into a substantially cylindrical tube, a first end of said tube defining said mouth piece, the second end of said tube defining said terminal end, said catalyst chamber comprising the interior of said tube between said first and second ends.
- 45 5. A holder according to any one of the preceding claims, wherein said catalyst material comprises manganese oxide, cobalt oxide; or copper oxide or a mixture of two or more such oxides.
- 50 6. A holder according to claim 1, substantially as described with reference to the accompanying drawings.